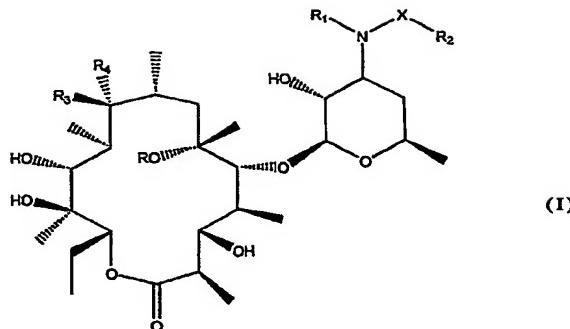


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Claims

1) A compound of formula

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wherein

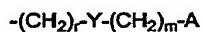
X is a -C(=O)-, -C(=O)-O-, -C(=O)-N-, -SO₂- or -SO₂-N group;

R is a hydrogen atom or methyl;

15 R₁ is a hydrogen atom or a (C₁-C₃)-alkyl group;

R₂ is a hydrogen atom, a (C₁-C₄)-alkoxy-(C₁-C₄)-alkyl group, a (C₅-C₇)-cycloalkyl group, a phenyl or a five- or six-membered heteroaryl having from one to three heteroatoms selected among nitrogen, oxygen and sulphur, a phenyl-(C₁-C₄)-alkyl or heteroaryl-(C₁-C₄)-alkyl group optionally substituted by 1 to 3 substituents selected

20 among a (C₁-C₄)-alkyl group, a (C₁-C₄)-alkoxy group and halogen, or a chain of formula



wherein

A is a phenyl or a five- or six-membered heteroaryl having from one to three

25 heteroatoms selected among nitrogen, oxygen and sulphur, both ones optionally substituted by 1 to 3 substituents selected among a (C₁-C₄)-alkyl group, a (C₁-C₄)-alkoxy group or halogen;

Y represents O, S or NR₆ wherein R₆ is a hydrogen atom, a linear or branched (C₁-C₃) alkyl, a (C₁-C₃)-alkoxycarbonyl group or a benzyloxycarbonyl group;

30 r is an integer comprised between 1 and 3;

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- m is an integer comprised between 0 and 3;
- R₃ is a hydroxy group or R₃ taken together with R₄ forms a (=O) group or a =N-O-R₅ group wherein R₅ is a hydrogen atom, a (C₁-C₄)-alkyl group, a benzyl or a-X-R₂ group wherein X and R₂ have the corresponding meanings defined above;
- 5 R₄ is a hydrogen atom or R₄ taken together with R₃ forms a (=O) group or a =N-O-R₅ group wherein R₅ has the meanings defined above;
- and furthermore R₂ is a (C₁-C₁₀)-alkyl group or a (C₄-C₁₀)-alkyl group when, at the same time, X is a -C(=O)- group, R₁ is a (C₁-C₃)-alkyl group and R₃ is a hydroxy
- 10 group or R₃ taken together with R₄ forms a =N-O-R₅ group wherein R₅ is different from -X-R₂;
- and pharmaceutically acceptable salts thereof.
- 2) A compound according to claim 1 wherein R, R₁, R₂ have the meanings as defined in formula I, X is a -C(=O)-, -C(=O)-N- or -SO₂- group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a (=O) group or a =N-O-R₅ group wherein R₅ is a hydrogen atom, methyl, benzyl or a -X-R₂ group wherein X and R₂ have the meanings as defined in formula I.
- 15 3) A compound according to claim 2 wherein R₁ is a hydrogen atom or methyl and R₅ is a hydrogen atom or a -X-R₂ group wherein X and R₂ have the meanings as defined in formula I.
- 20 4) A compound according to claim 3 wherein R₂ is a hydrogen atom, a (C₁-C₄)-alkoxy-(C₁-C₄)-alkyl group, a (C₅-C₇)-cycloalkyl group, a phenyl or a five- or six-membered heteroaryl having from one to three heteroatoms selected among nitrogen, oxygen and sulphur, a phenyl-(C₁-C₄)-alkyl or heteroaryl-(C₁-C₄)-alkyl group
- 25 optionally substituted by 1 to 3 substituents selected among a (C₁-C₄)-alkyl group, a (C₁-C₄)-alkoxy group and halogen, or a chain of formula
- (CH₂)_n-Y-(CH₂)_m-A
- wherein
- A is a phenyl or a heteroaryl selected among furan, thiophene, oxazole, imidazole,
- 30 pyridine, pyrimidine and triazole both ones optionally substituted by 1 to 3

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substituents selected among a (C₁-C₄)-alkyl group, a (C₁-C₄)-alkoxy group or halogen;

Y represents O, S or NR₆ wherein R₆ is a hydrogen atom or methyl;

5 r is an integer comprised between 1 and 3;

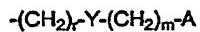
m is an integer comprised between 0 and 3;

and furthermore R₂ is a (C₁-C₁₀)-alkyl group or a (C₄-C₁₀)-alkyl group when, at the same time, X is a-C(=O)- group, R₁ is a (C₁-C₃)-alkyl group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a =N-O-R₅ group wherein R₅ is different

10 from -X-R₂.

5) A compound according to claim 1 wherein R₁ is methyl and R₂ is a methoxy-(C₁-C₃)-alkyl group, a (C₅-C₇)-cycloalkyl group, a phenyl or a heteroaryl selected among furan, thiophene, oxazole and pyridine, a benzyl or heteroaryl-(C₁-C₄)-alkyl group optionally substituted by a substituent selected among a (C₁-C₄)-alkyl group, a 15 methoxy group and halogen, or a chain of formula

wherein



A is a phenyl or a heteroaryl selected among furan, thiophene, oxazole and pyridine, both ones optionally substituted by a substituent selected among a (C₁-C₄)-alkyl

20 group, a methoxy group or halogen;

Y represents O, S or NR₆ wherein R₆ is a hydrogen atom;

r is an integer comprised between 1 and 3;

m is an integer selected among 0 and 1;

and furthermore R₂ is a (C₁-C₇)-alkyl group or a (C₄-C₁₀)-alkyl group when, at the 25 same time, X is a-C(=O)- group, R₁ is a (C₁-C₃)-alkyl group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a =N-O-R₅ group wherein R₅ is different from -X-R₂.

6) A compound according to claim 1 wherein R, R₁, R₂ and X have the meanings as defined in formula I, R₃ is a hydroxy group and R₄ is a hydrogen atom.

30 7) A compound according to claim 6 wherein R₁ is a hydrogen atom or methyl and X

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is a $-C(=O)-$, $-C(=O)-N-$ or $-SO_2-$ group.

- 8) A compound according to claim 7 wherein R_2 is a hydrogen atom, a (C_1-C_4)-alkoxy-(C_1-C_3)-alkyl group, a (C_5-C_7)-cycloalkyl group, a phenyl or a five- or six-membered heteroaryl having from one to three heteroatoms selected among nitrogen, oxygen and sulphur, a phenyl-(C_1-C_4)-alkyl or heteroaryl-(C_1-C_4)-alkyl group optionally substituted by a substituent selected among a (C_1-C_4)-alkyl group, a (C_1-C_4)-alkoxy group and halogen, or a chain of formula

- 10 wherein $-(CH_2)_r-Y-(CH_2)_m-A$
A is a phenyl or a heteroaryl selected among furan, thiophene, oxazole, imidazole, pyridine, pyrimidine and triazole both ones optionally substituted by a substituent selected among a (C_1-C_4)-alkyl group, a (C_1-C_4)-alkoxy group or halogen;
Y represents O, S or NR₆ wherein R₆ is a hydrogen atom or methyl;
15 r is an integer comprised between 1 and 3;
m is an integer selected among 0 and 3;
and furthermore R_2 is a (C_1-C_7)-alkyl group or a (C_4-C_{10})-alkyl group when, at the same time, X is a $-C(=O)-$ group, R₁ is a (C_1-C_3)-alkyl group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a $=N-O-R_5$ group wherein R₅ is different
20 from $-X-R_2$.
9) A compound according to claim 8 wherein R₁ is methyl and R₂ is a hydrogen atom, a methoxy-(C_1-C_3)-alkyl group, a (C_5-C_7)-cycloalkyl group, a phenyl or a heteroaryl selected among furan, thiophene, oxazole and pyridine, a benzyl or heteroaryl-methyl group wherein heteroaryl is selected among furan, thiophene, oxazole and pyridine, optionally substituted by a substituent selected among a (C_1-C_4)-alkyl group, a methoxy group and halogen, or a chain of formula

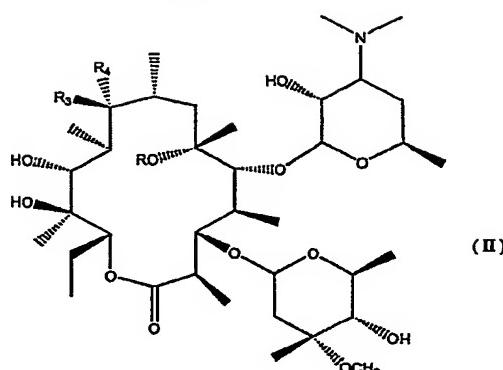
- 25 wherein $-(CH_2)_r-Y-(CH_2)_m-A$
A is a phenyl or a heteroaryl selected among furan, thiophene, oxazole and pyridine,
30 both ones optionally substituted by a substituent selected among a methyl group, a

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- methoxy group or halogen;
- Y represents O, S or NR₆ wherein R₆ is a hydrogen atom;
- r is an integer comprised between 1 and 3;
- 5 m is an integer selected among 0 and 1;
and furthermore R₂ is a (C₁-C₇)-alkyl group or a (C₄-C₁₀)-alkyl group when, at the same time, X is a-C(=O)- group, R₁ is a (C₁-C₃)-alkyl group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a =N-O-R₅ group wherein R₅ is different from -X-R₂.
- 10 10) A compound according to claim 9 wherein R₂ is a methoxy-methyl group, a cycloesyl, a phenyl or a heteroaryl selected among furan, thiophene, oxazole and pyridine, a benzyl or thiophen-1-yl-methyl group optionally substituted by a substituent selected among a methyl group, a methoxy group and halogen, or a chain of formula
- 15 wherein $-(CH_2)_r Y -(CH_2)_m A$
- A is a phenyl or pyridine, both ones optionally substituted by a methoxy group;
- Y represents O, S or NR₆ wherein R₆ is a hydrogen atom;
- r is an integer comprised between 1 and 3;
- m is an integer selected between 0 and 1;
- 20 and furthermore R₂ is a (C₁-C₇)-alkyl group or a (C₄-C₁₀)-alkyl group when, at the same time, X is a-C(=O)- group, R₁ is a (C₁-C₃)-alkyl group and R₃ is a hydroxy group or R₃ taken together with R₄ forms a =N-O-R₅ group wherein R₅ is different from -X-R₂.
- 11) A compound according to claim 1 wherein the -X-R₂ substituent in the meanings
- 25 of R₅ has the same meanings of the X and R₂ substituents at 3' position.
- 12) A process for the preparation of a compound according to claim 1 which comprises:
- a. the demethylation of the dimethylamino group at 3' position of a compound of formula

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10 wherein

- R, R₃ and R₄ are as defined as in claim 1;
- b. the removal of L-cladinose by a hydrolysis reaction;
 - c. the amidation reaction of the primary or secondary aminic group obtained by item a.
- 15 13) A process according to claim 12 wherein R₃ in formula II is a hydroxy group and R₄ is a hydrogen atom.
- 14) A process according to claim 12 wherein the removal of the cladinose is carried out by an acid catalyzed hydrolysis in presence of a mineral acid and of a protic organic solvent.
- 20 15) A pharmaceutical composition comprising a therapeutically effective amount of a compound according to claim 1 in admixture with a pharmaceutically acceptable carrier.
- 16) A pharmaceutical composition according to claim 15 useful in the treatment of inflammatory diseases.
- 25 17) A pharmaceutical composition according to claim 15 useful in the treatment of respiratory diseases.
- 18) A pharmaceutical composition according to claim 16 useful in the treatment of gastrointestinal diseases.